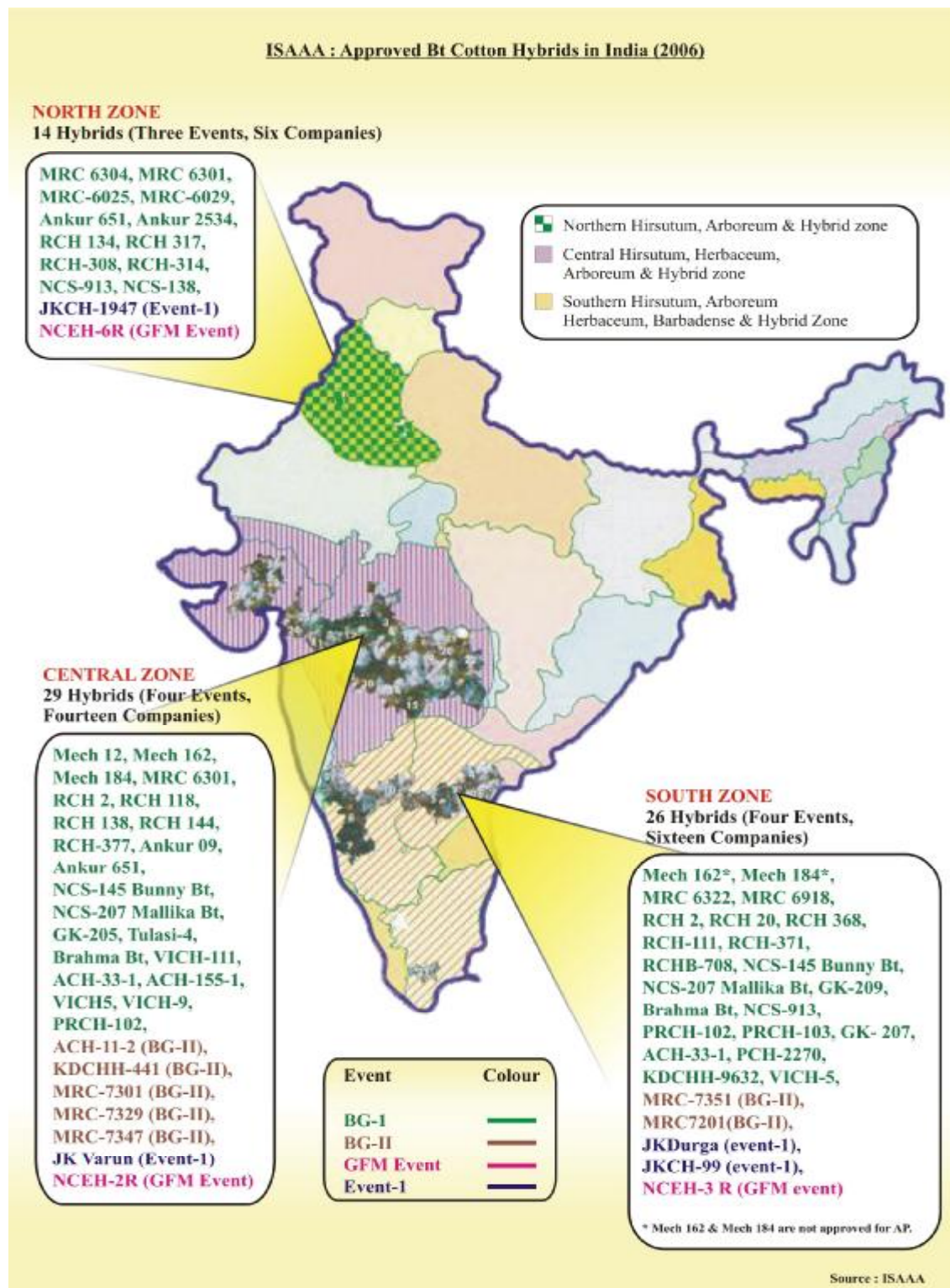




ISAAA: Fact Sheet on Approved Bt Cotton Hybrids in India (2006)



To view larger image, go to http://www.isaaa.org/kc/CBTNews/files/india_btotton.htm

ISAAA: Status of the Zone-Wise Approval of Bt cotton Hybrids in India (2006)

ZONE	2002	2003	2004	2005	2006
NORTH ZONE				6 Hybrids	14 Hybrids
Haryana				One Event	Three Events
Punjab				3 Companies	6 Companies
Rajasthan					
CENTRAL ZONE	3 Hybrids	3 Hybrids	4 Hybrids	12 hybrids	29 Hybrids
Gujarat				One Event	Four Events
Madhya Pradesh				4 Companies	14 Companies
Maharashtra					
SOUTH ZONE	3 Hybrids	3 Hybrids	4 Hybrids	9 Hybrids	26 hybrids
Andhra Pradesh				One Event	Four Events
Karnataka				3 Companies	16 Companies
Tamil Nadu					
TOTAL HYBRIDS	3 Hybrids	3 Hybrids	4 Hybrids	20 Hybrids	58 Hybrids
					Four Events
					16 Companies

- All approved hybrids belong to sixteen major seed companies from India i.e. Mahyco (MECH, MRC), Rasi (RCH), Ankur Seeds (Ankur), Nuziveedu Seed (NSC), JK Seeds (JKCH), Nath Seeds (NCEH), Ganga Kaveri Seeds (GK), Tulasi Seeds (Tulsi), Ajeet Seeds (ACH), Emergent Genetics (Brahma), Vikki Agrotech (VICH), Vikram Seeds (VICH), Pravardhan Seeds (PRCH), Krishidhan (KDCHH), Prabhat (PCH) and Vikram (VICH) seeds.
- In 2002, Maharashtra Hybrids Seeds Company Ltd (Mahyco) received first approval for three Bt cotton hybrids i.e. MECH 12, MECH 162 and MECH 184 for commercial cultivation in Central & Southern cotton growing zones in India.
- In 2004, the Genetic Engineering Approval Committee (GEAC) of the Ministry of Environment & Forest (MOEF) had approved one more Bt cotton hybrid of Rasi Seeds for cultivation in Central and Southern zones. With four Bt cotton hybrids in market, area under Bt cotton rose from 44,500 hectare in 2002-03 to 100,000 hectare in 2003-04 to 500,000 hectare in 2004-05, a quantum five-fold increase in Bt cotton area between 2003 and 2004.

ISAAA: Adoption of Bt Cotton in India (2002-06)

Year	Area under Bt Cotton (ha)	Nos. of Farmers
2002-03	44,500	-
2003-04	100,000	-
2004-05	500,000	300,000
2005-06	13,00,000	10,00,000

Source: ISAAA

- In 2004, more than 300,000 small and medium farmers in Central and Southern zones enjoyed the benefits of Bt cotton technology with increased yield, reduced pesticides applications and health and environmental benefits.
- In 2005, six new varieties of Bt cotton hybrids were approved first time for commercial cultivation in Northern zone. In addition, eight new Bt cotton hybrids were approved for Central zone and five Bt cotton were approved for Southern zones in 2005. As a result, farmers had more choices to grow Bt cotton hybrids i.e 6 hybrids in Northern zone, 12 hybrids in Central zone and 9 hybrids in Southern zone respectively.
- In 2005, India experienced the highest proportional growth for any biotech crop globally in 2005 with Bt cotton cultivation soaring 160 percent. Around 13,00,000 hectares of cotton land were planted with Bt cotton hybrids by more than one million farmers in Northern, Central and Southern cotton growing zones in 2005.
- The major states growing Bt cotton in 2005 were Maharashtra ranked first with 590,000 hectares followed by Andhra Pradesh with 280,000 hectares, Gujarat with 150,000 hectares, Madhya Pradesh 145,000 hectares, Northern States with 60,000 hectares, Karnataka with 30,000 hectares and Tamil Nadu with 25,000 hectares for a national total of 13,00,000 hectares.

ISAAA: State-Wise Adoption of Bt Cotton in India

State	2004 (ha)	2005 (ha)	Growth (%)	Rank Area-wise (2005/2004)
Maharashtra	200,000	590,000	195	1/1
Gujarat	130,000	150,000	15	3/2
Madhya Pradesh	85,000	145,000	71	4/3
Andhra Pradesh	80,000	280,000	250	2/4
Karnataka	18,000	30,000	67	6/5
Tamil Nadu	10,000	25,000	150	7/6
Northern Zone (Punjab, Haryana, Raj)	n/a	60,000	n/a	5/0
Total	500,000	13,00,000	160	-

Source: ISAAA

- In 2006, the GEAC has approved 38 new varieties of Bt cotton hybrids for commercial cultivation in 2006 season in addition to the 20 Bt cotton hybrids approved for sale in 2005. This brings the total of Bt cotton hybrids to 58, giving farmers of India's three cotton-growing zones more choices on which varieties to cultivate in 2006.
- Of the total 58 varieties of Bt cotton hybrids approved for commercial cultivations till now, 14 hybrids containing three events to be sold by six companies in Northern zone, 29 hybrids

containing 4 events to be sold by fourteen companies in Central Zone and 27 hybrids containing four events to be sold by sixteen companies in Southern zones.

- Of the total 58 varieties of Bt cotton hybrids approved for commercial cultivations;
 - 44 Bt cotton hybrids containing Cry1Ac gene known as event BG-I
 - 7 Bt cotton hybrids containing stacked Cry X (Cry I Ac and Cry 2 Ab) genes known as event BG-II
 - 4 Bt cotton hybrids containing Cry1Ac gene known as Event-1 and,
 - 3 Bt cotton hybrids containing fusion genes (cry 1Ab and cry Ac) known as GFM event.

ISAAA: Status of the Event-Wise Approval of Bt cotton Hybrids in India (2006)

Event	North	Central	South	Total Hybrids
Bollgard-I (Mahyco)	12	22	21	44
Bollgard-II (Mahyco)	0	5	2	7
Event 1 (JK Seeds)	1	1	2	4
GFM Event (Nath Seeds)	1	1	1	3
Total Hybrids	14	29	26	58

Source: ISAAA

- Interestingly, the GEAC has approved three new events of biotech cotton in 2006;
 - First developed by M/s JK Seeds Pvt Ltd containing the Cry1Ac gene known as (Event 1) sourced from IIT Kharagpur, India;
 - Second developed by M/s Nath Seeds Pvt Ltd containing fusion genes (cry 1Ab and cry Ac) known as (GFM event) sourced from China and,
 - Third developed by Mahyco containing stacked Cry X (Cry I Ac and Cry 2 Ab) genes (Event MON 15985 or BG-II) sourced from Monsanto.

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